Remarks

Rejections Under 35 USC 112:

All claims rejected under 35 USC §112, have been cancelled with this response.

Rejections Under 35 USC 102 and 103:

Claims 1, 2, 15, and 16 were rejected under 35 USC §102(e) as being anticipated by Mesecher (6, 115,406). Claims 3, 8, and 9 were rejected under 35 USC §103(a) as being unpatentable over Ketchum (6,760,388). Claims 5 and 6 were rejected under 35 USC §103(a) as being unpatentable over Ketchum in further view of Benz (6,885,875). Claims 10 and 11 were rejected under 35 USC §103(a) as being unpatentable over Mesecher in view of Benz. Claims 17-18, and 24-25 were rejected under 35 USC §103(a) as being unpatentable over Ketchum. Claims 20, 21, and 22 were rejected under 35 USC §103(a) as being unpatentable over Mesecher in view of Ketchum and further in view of Benz. Claims 26-27 were rejected under 35 USC §103(a) as being unpatentable over Mesecher in view of Benz.

In response, the Applicants have cancelled claims 1-2, 6-9, 11-14, 17, 19, 22-25, and 27-30. All remaining independent claims have been amended to particularly point out and clarify what the Applicants regard as their invention. In particular, independent claims 3, 10, and 15 were amended to specifically contain the limitation that steps for generating the stream weights are repeated when certain conditions are not met. Particularly, claims 3 and 15 repeat steps (2) through (5) when all of the mean square errors of the plurality of stream weights are unequal. Claim 10 repeats steps 4-7 when an increment is greater than a resolution value.

Analysis of the prior art cited by the Examiner reveals the no reference either teaches or otherwise suggest the repetition of certain steps for weighting a signal stream when certain conditions are not met. For example, analysis of Ketchum reveals that Ketchum requires full channel state information at the transmitter (which, besides being stated in Ketchum (col. 5, lines 8-25), is obvious from the user of water filling in Ketchum) and the applicant's invention requires only the statistical nature of the channel and noise power. Thus there is a profound difference between the applicant's invention and Ketchum.

Regarding newly-added claims 33-39, these claims have the specific limitation that the unequal power weightings for each data stream are based on a statistical nature of the channel vectors and a noise power. Analysis of the prior shows that the prior art fails to teach or otherwise suggest this limitation. Particularly, the power weightings of Ketchum are based on deterministic channel knowledge (i.e., channel state information) which is not statistical in nature. In other words, where deterministic channel knowledge is knowledge of the instantaneous realization of the channel, the Applicants specifically claim that their power weightings are "statistical" in that they are not an instantaneous realization of the channel, but are based on statistical characteristics of the random channel.

No amendment made was related to the statutory requirements of patentability unless expressly stated herein; and no amendment made was for the purpose of narrowing the scope of any claim, unless Applicant has argued herein that such amendment was made to distinguish over a particular reference or combination of references. As the Applicant has overcome all substantive rejections given by the Examiner the Applicant contends that this Amendment, with the above discussion, overcomes the Examiner's rejections to the pending claims. Therefore, the Applicant respectfully requests allowance of the application. If the Examiner is of the opinion that any issues regarding the status of the claims remain after this response, the Examiner is invited to contact the undersigned representative to expedite resolution of the matter. Finally, please charge any fees (including extension of time fees) or credit overpayment to Deposit Account No. 502117.

Respectfully Submitted,
Thomas, ET AL.

by:_____

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